

main level faulting occurs, so that a great deal of coal is not expected to be won from this small section. A stone drive has been set away off this level in a south-east direction in order to win the coal lying to the eastward of Coal Creek, where it is estimated a large field of coal exists. This drive will be approximately 20 chains in length, and is being driven 11 ft. by 7 ft. in the clear. A drive 4 chains from the outcrop has been driven in this section, and shows the coal to be of a very superior quality. In all probability these drives will be pushed ahead, so that when the outside developments are completed the mine will be ready at once to supply a good output. The prospects for dealing with a large output are very promising, owing to the fact that coal can be won from various sections on either side of the main haulage-road. A good deal of delay in the completion of the bins, &c., has been caused by not being able to get the material required when wanted, on account of the railway-line under the Public Works Department not being completed. However, this difficulty will soon be overcome, and completion of the necessary surface arrangements will be pushed on with expedition.

*Paparoa Colliery* (J. Hayes, mining engineer; D. S. A. Patterson, mine-manager).—The output from this mine was 21,218 tons, a decrease of 15,378 tons as compared with the previous year's output. This is accounted for by the fact that the mine ceased operations on the 21st October for an indefinite period, and previous to that date it was worked very intermittently on account of want of trade. The operations during the year were principally confined to development and the establishment of a permanent system of ventilation for the mine. This consists of splitting and supplying each seam with a fresh current of air, the splits again uniting in one main current before reaching the fan. The result is effected by connecting the various seams by stone drifts. The ventilating-current is produced by a Sirocco fan running at moderate speed, the quantity of air circulating varying from 55,000 to 65,000 cubic feet per minute. During the year coal of very good quality and hardness, with a thickness of 16 ft. and upwards, has been reached across a fault in No. 2 seam, and this may be expected to thicken as the workings proceed towards the rise, as the seam is known to attain to 20 ft. in thickness at some of the outcrops. Surface prospecting in the Mount Davy section has also proved this seam of great thickness, over 30 ft. being exposed in one place without bottom being reached. The prospects, so far as this seam is concerned, are promising. Very little work has been done in Nos. 1 and 3 seams, and the coal there has the appearance of having undergone severe crushing. Safety-lamps are used in seams 1 and 2, whilst naked lights are used in No. 3. An appreciable amount of methane is given off in these seams, and every precaution is taken to thoroughly dilute it with fresh air, so as to render it harmless. All shots in Nos. 1 and 2 seams are exploded electrically. The mine is being kept in good working order, an underviewer and deputy being employed for the purpose, while an enginewright is engaged on the surface. The fan is run at intervals to prevent any accumulation of noxious gases.

*Brunner Mine, St. Kilda Section* (R. Alison, mining manager; J. Armstrong, mine-manager).—(19/12/11): A considerable proportion of the output has been won from the north heading, where, owing to a large fault, it has become necessary to begin pillar-extraction. This part of the mine is nearing exhaustion, the remaining coal being in a long narrow strip between two faults. The lower level has been driven a distance of 22 chains, and is still in coal, which continues to be of a very friable and soft nature. From the old Brunner Mine about 5,000 or 6,000 tons of excellent coal has been won, this being obtained by driving adits into the side of the hill and extracting the few stumps of pillars that were left in order to support the face of the cliff above. A large amount of excellent fireclay has also been won from this section. During the period under review the oil-engine used for driving the fan has been discarded and a Pelton wheel erected and connected direct to the fan-shaft, thereby producing improved ventilation. On my first visit to the mine the ventilation was sluggish, owing to the unsatisfactory running of the oil-engine, but since the installation of the Pelton wheel the ventilation has been entirely satisfactory. Future developments must necessarily be directed to the dip where a block of coal, extending probably a distance of about 10 chains, is expected to be opened up. Already a dip haulage-road has been completed as far as the lower level, and it is proposed to prospect this block of coal very shortly. The output for 1911 was 31,406 tons, a decrease of 8,284 tons compared with 1910. A large amount of small coal from this mine is used in the production of coke. No serious accidents have been reported during the year.

*Blackball Colliery* (W. Leitch, mining manager; J. Hamilton, mine-manager).—The output for the year was 156,821 tons, being a decrease on the previous year's operations to the extent of 9,684 tons. Two shifts of workmen are employed. The output from this mine has been won from banks Nos. 14 to 17 inclusive, and 19 and 20, with the addition of a little from the dip. The method of mining is to extract the pillars as soon as the ordinary bord has been driven. The bords are driven to meet from the pair of banks. When the pillar has been brought back to within 7 yards of the bank a tight stopping is erected and the goaf effectually sealed off. This process is continued until the whole of the bords in the bank have been driven and the pillars extracted. This is an excellent method to work a seam of coal like the Blackball, which is exceedingly liable to spontaneous combustion. Not only does this method allow of the winning of the coal in a minimum time, but the pillar is extracted while the first timber is yet strong, and the coal itself and the roof-rock are less liable to become crushed and broken. Development-work to the east and west of No. 17 incline has proved the coal to be of very good quality throughout. The incline itself has been standing owing to its being so far in advance of the present workings. There is still 20 chains of coal ahead before it reaches the outcrop, and this probably will be developed during the coming year.

Dip section: This section has not been opened out to the extent that was anticipated at the beginning of the year, owing to the large quantity of water which found its way into the work-